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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,374	09/02/2004	Gerald Adams	J3651(C)	1186
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EXAMINER MAHYERA, TRISTAN J				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,374

Applicant(s)

ADAMS ET AL.

Examiner

TRISTAN J. MAHYERA

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5-15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' arguments and amendments, filed on 5/7/2008 have been received and entered in the record.

Status of the Claims

Claims 1-3, 5-15 and 17-19 are pending. Claims 1-3, 17 and 18 have been amended. Claims 4 and 16 have been cancelled. Claims 1-3, 5-15 and 17-19 are examined on the merits.

Response to Arguments

Applicant's arguments with respect to claims are the following:

A) Applicants' argue that beginning a dependent claim that directly or indirectly references back to an independent claim with "a" rather than "the" is not improper because many issued patents follow this format.

B) Applicants arguments regarding "R" in Claim 19 is persuasive and the rejection has been withdrawn.

C) Although not clear, it is believed that Applicants are arguing in the last paragraph of page 8 and top of page 9 that neither PEI-HING nor NAGARAJAN employ the use of a divalent linker, and the amendment to the claims of such a divalent linker renders the relevant 102 rejection moot.

D) Applicants argue that there is nothing in the references that discloses or suggests the use of the polymers therein described in hair styling products. Specifically,

the polymer in ADAMS contains A and B units that are compositionally different from those of the PEG block copolymers of the subject invention and no suggestion or disclosure exists that would result in polymers having applications in hair styling products. Furthermore, the references teach away from their use as styling aids to provide improved high humidity.

E) FRECHET does not disclose or suggest polymers having a PEG core.

Examiners response to the above arguments:

With respect to A), Applicants can unfortunately point to examples where the use of "a" and "the" is improper in prior patents, however, prior patents do not have any bearing on the present prosecution. The use is improper as claimed and correction is required.

With respect to C), Applicants' argument is found persuasive, but only in light of the new amendments, thus new rejections are found below.

With regard to D), little weight is given to the product being used in hair styling products as that is merely an intended use and does not in any way define or add structural limitations. Only the structural limitations are given patentable weight in product claims. While it is true that the A and B units are different in ADAMS, there is no evidence that the linkers in ADAMS are only useful to the specific A or B units in the reference, in fact ADAMS states that a typical copolymer uses linkers and then gives examples of such linkers L (see e.g. . p[0050-64]). The reference further demonstrates the flexibility of the linkers in joining A and B units by stating numerous non-limiting

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options such as A-L-B, A-L-B-L-A, -(A-L-B)_n- and specifically states that the linkers can be used in triblock structures. See e.g. p[0064]. One skilled in the art would be well versed that linkers are typically used in triblock copolymers and would find in ADMAMS a teaching of the specific linkers L capable of being used in triblock copolymers of the same general formula ABA as found in NAGARJAN.

With regard to Applicants' argument E) against the FRECHET reference individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Objections

Claims 2, 3, 5-15 and 17-19 **remain** objected to because of the following informalities: These claims recite "**A** hair treatment composition..." however, dependent claims must be drawn to "**The** hair treatment composition..." in order to properly define the invention. Appropriate correction is required. New claims 17-19 are objected to for the same reasons as stated above.

Claim 2 is **newly objected** to in light of the amendments for the term "carboxycylic" which is the misspelled form of "carbocyclic" as stated on page 14 line 11 of the specification.

Claim Rejections - 35 USC § 112

The quotation of the first paragraph of 35 U.S.C. 112 can be found in a prior office action.

The rejections of claims 2, 3 and 17-19 under 35 U.S.C. 112, second paragraph are hereby **withdrawn** in light of Applicants' arguments and amendments.

In view of Applicants' cancellation of claim 4, Claims 5, 6 and 19 are **newly** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5, 6 and 19 recite the limitation "the divalent linker group". There is insufficient antecedent basis for this limitation in the claims. The scope of these claims changes depending on which independent claim these rejected claims will depend from, thus the antecedent basis prevents a substantive prior art rejection.

Claim Rejections - 35 USC § 102

The rejection of Claim 1 under 35 U.S.C. 102(b) as being anticipated by NAGARAJAN et al. "Poly(ethylene glycol) block copolymers by redux process: kinetics, synthesis and characterization", Pure & Appl. Chem., Vol 70, No. 6, pp. 1245-1248, 1998 is hereby **withdrawn** in light of applicants' amendments.

Claim Rejections - 35 USC § 103

The quotation of 35 U.S.C. 103(a) and statement can be found in a prior Office action.

New Claims 1-3 **remain** rejected under 35 U.S.C. 103(a) as being unpatentable over NAGARAJAN in view of PEI-HONG et al. ("Synthesis and Characterizations of Poly[2-(dimethylamino)ethyl methacrylate]-Poly(propylene oxide)-Poly[2-(dimethylamino)ethyl methacrylate] ABA Triblock Copolymers", J. of Polymer Science: Part A: Polymer Chemistry, Vol 40, 624-631, 2000) and in view of ADAMS et al (US 2002/0098214 see PTO-1449).

NAGARAJAN teaches ABA block copolymers of PEG with MMA and MAA in aqueous medium. A specific block polymer synthesized is the Poly(methyl methacrylate)-b-Poly(ethylene glycol)-b-Poly(methyl methacrylate) See e.g. page 1248, DSC studies; instant claims 1 and 2. The synthesis of these polymers was carried out in an aqueous acidic medium and water is a cosmetically acceptable diluent or carrier. See e.g. see page 1246, Polymerisation line 1; instant claims 1 and 2.

NAGARAJAN does not teach Poly[2-(dimethylamino)ethyl methacrylate] as the A group.

PEI-HONG teaches a method of synthesizing a well-defined ABA triblock copolymer. The triblock polymer has Poly[2-(dimethylamino)ethyl methacrylate] as the A group and Poly(propylene oxide) as the B group. See e.g. page 626, Figure 1; instant claims 1-3. Poly(propylene oxide) is the same compound as poly(propylene glycol) and differs from poly(ethylene glycol) by one carbon. While the B group is not PEG, the specification of the instant application discloses any poly(alkylene glycol) as

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suitable for the hair care composition of the instant application. See e.g. page 6 lines 20-21 of the instant specification.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a Poly[2-(dimethylamino)ethyl methacrylate]-Poly(ethylene oxide)-Poly[2-(dimethylamino)ethyl methacrylate] ABA triblock copolymers as taught by NAGARAJAN in view of PEI-HONG. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because ABA polymers consisting of both hydrophilic and hydrophobic blocks are used widely in the biomedical, surface and biological sciences and poly(propylene glycol) and poly(ethylene glycol) are both hydrophilic and would have the same predictable art recognized function in a polymer with DMAEMA as the A group. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

NAGARAJAN does not exemplify any divalent linkers.

ADAMS teaches polysiloxane block copolymers for use in cosmetic and hair styling compositions where the A and B group in a diblock AB or ABA triblock copolymer are connected by a linker. The linkers are "-R-C(O)-O-", "-R-O-(O)-O-", "-R-C(O)-N(R')-", "-R-O-C(O)-N(R')-", or "-R-N(R')-C(O)-N(R'')-" in which R is a divalent, optionally substituted, linear or branched C1-C18 hydrocarbon radical and in which R' and R'' are independently selected from monovalent, optionally substituted, linear or branched C1-

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C18 hydrocarbon radicals. See e.g. claim 4 and p[0058]-p[0066]: instant claims 4-6 and 19. ADAM specifically teaches A-L-B-L-A triblock copolymers used with the divalent linkers. See e.g. p[0066].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a hair treatment composition comprising the MMA-b-PEG-b-MMA block polymer where MMA and PEG are linked with a divalent linker, as taught by NAGARJAN and PEI-HONG in view of ADAMS. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because the divalent linkers are used specifically to link triblock copolymers of the general ABA formula, as taught by ADMAS. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

New Claims 1, 7-15, 17 and 18 **remain** rejected under 35 U.S.C. 103(a) as being unpatentable over NAGARAJAN in view of ADAMS in view of FRECHET et al. (US 2002/0160026 see PTO-892 filed 10/12/2007).

NAGARAJAN and ADAMS teach ABA block copolymers with divalent linkers, as described above.

NAGARAJAN and ADAMS do not exemplify excipients, concentrations of the polymer and excipients or solvents.

FRECHET teaches a cosmetic composition comprising a thermoplastic elastomer having a backbone comprising at least a proportion of C-C bonds and two or more flanking polymers. See paragraph [0014]. The resulting copolymer can be an ABA block copolymer, see paragraph [0022]; instant claim 1. The cosmetic composition can be used for hair treatment, specifically hair styling, and comprise a cosmetically acceptable diluent or carrier and may contain a fragrance or perfume, see Abstract and paragraph [0080]; instant claims 1 and 8. The flanking and core polymers of the ABA copolymer are typically selected in a manner so as to produce a block copolymer with balanced hydrophilic/hydrophobic character. The copolymer may be, for example, soluble in water, ethanol or mixtures thereof or soluble in other cosmetically acceptable diluents or carriers. See paragraph [0028]; instant claim 7. The level of solubility is preferably from about 1% to about 25% by weight at 25C. See e.g. p[0029]; instant claims 17 and 18. The A group can be made of numerous compounds, preferably based on the monomer of dimethylaminoethyl methacrylate, see paragraph [0058] line 8; instant claim 1-3. Compositions of FRECHET contain the polymer in an amount ranging from 0.01% to 30%, more preferably from 0.1 to 10%, even more preferably from 0.1 to 5% by weight. See paragraph [0080]; instant claim 10. FRECHET also teaches the use of any conventional propellant to deliver the material as foam or as a fine, uniform spray. See paragraph [0086]; instant claim 13. The level of propellant can be adjusted as desired but is generally from about 3% to about 30% by weight based on total weight for mousse compositions and from about 15% to about 50% by weight based on total weight for aerosol hair spray compositions. See paragraph [0086];

instant claim 9. Additionally a surfactant can be present at a level of from about 0.01% to about 7.5% by weight based on total weight of the composition. See paragraph [0086]; instant claim 12. The use of a structurant or thickener is taught and can be added an amount of from 0.01% to 10% by weight. See paragraph [0088]; instant claim 14. A cosmetic method of treating hair by applying the composition is disclosed in claims 29-31; instant claim 15. Finally, "[p]roducts of identical chemical composition can not have mutually exclusive properties.' A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)." See MPEP 2112.01.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to make a hair styling composition comprising ABA block copolymers, a surfactant, propellant and fragrances or perfumes, as taught by NAGARAJAN and ADAMS in view of FRECHET. One of ordinary skill in the art at the time the invention was made would have been motivated to combine these elements into a single composition because the propellants, surfactants and fragrances or perfumes are known to improve a hair styling composition containing ABA triblock polymers, as taught by FRECHET. Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **TRISTAN J. MAHYERA** whose telephone number is 571-270-1562. The examiner can normally be reached on Monday through Friday 9am-7pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **MICHAEL P. WOODWARD** can be reached on 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tristan J Mahyera/
Examiner, Art Unit 1615

/MP WOODWARD/
Supervisory Patent Examiner, Art Unit 1615